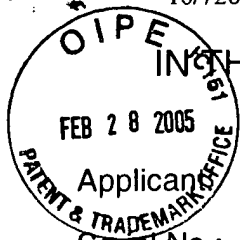


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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ronald Scott Bunker et al.

Group Art Unit: 3746

Serial No.: 10/720,045

Examiner:

Filed: November 19, 2003

For HOT GAS PATH COMPONENT WITH MESH  
AND DIMPLED COOLING**SUPPLEMENTAL INFORMATION  
DISCLOSURE STATEMENT**

- ☒ 1 **Pursuant to 37 CFR 1.97(b)**  
[within 3 months of national, non-CPA filing or prior to 1st Office Action] *no charge*
- ☐ 2 **Certification Pursuant to 37 CFR 1.97(c)(1)**  
[before Final Office Action, Allowance, or other action closing prosecution] *no charge*
- ☐ 3 **Fee Payment Pursuant to 37 CFR 1.97(c)(2)**  
[before Final Office Action, Allowance, or other action closing prosecution] *\$180.00*
- ☐ 4 **Certification & Fee Payment Pursuant to 37 CFR 1.97(d)**  
[On or before issue fee payment] *\$180.00*

ATTN: MAILSTOP PATENT APPLICATION  
COMMISSIONER FOR PATENTS  
ALEXANDRIA, VA 22313-1450

Sir:

The following are submitted in the above identified application in compliance with 37 CFR 1.97 & 37 CFR 1.98:

- ☒ 5 A list of documents on form PTO-1449 or Substitute together with copies of each identified document and a translation thereof or a concise explanation of each non-English language document or a Search Report from an International Searching Authority for a patent application filed via the Patent Cooperation Treaty or document(s) cited in the application or the priority application.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date indicated below.

\_\_\_\_\_  
Date of Deposit\_\_\_\_\_  
Type or Print Name\_\_\_\_\_  
Signature

This paper is submitted in accordance with:

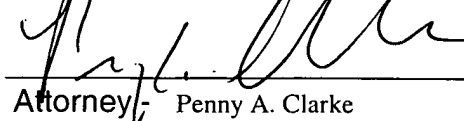
- ☒ 6 37 CFR 1.97(b): [within 3 months of national, non-CPA filing or prior to 1st Office Action]
- ☐ 7 37 CFR 1.97(c): [before Final Office Action, Allowance, or other action closing prosecution, whichever is earlier]; and
- ☐ 8 The required Certification made in item 11 below; or
- ☐ 9 The \$180.00 fee specified in 37 CFR 1.17(p) for submission of this Information Disclosure Statement is authorized in item 15 below.
- ☐ 10 37 CFR §1.97(d): [On or before issue fee payment]; and
- a) The required Certification is stated in item 11 below; and
- b) The \$180.00 fee specified in 37 CFR 1.17(p) for submission of this Information Disclosure Statement is authorized in item 14 below.
- ☐ 11 Certification
- ☐ 12 Each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; or
- ☐ 13 No item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this document after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated in 37 CFR 1.56(c) more than three (3) months prior to the filing of this Statement.
- ☐ 14 Payment of all applicable fees:
- ☒ 15 Please charge all applicable fees associated with the submittal of this Information Disclosure Statement and any other fees applicable to this application to Deposit Account No. 07-0868. An original and two (2) copies of this document are enclosed.

2-27-05

Date

General Electric Company  
GEGR Patent Docket Rm. Bldg. K-1 Rm. 4A59  
One Research Circle  
Niskayuna, New York 12309  
Customer Number: 006147

Respectfully submitted



Attorney/- Penny A. Clarke

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FORM PTO-1449  
(REV. 7-80)  
(Title Amended 3/83)

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

124698-1

SERIAL NO.

10/720,045

INFORMATION DISCLOSURE STATEMENT BY APPLICANT--

Applicant

Ronald Scott Bunker et al.

Filing Date

November 19, 2003

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3746

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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA					
	AB					
	AC					
	AD					
	AE					
	AF					
	AG					
	AH					
	AI					
	AJ					
	AK					

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	No
	AL						
	AM						
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OTHER INFORMATION (Including Author, Title, Date, Pertinent pages. Etc.)

AR	M. Ya Belen'kii et al., "Experimental Study of the Thermal and Hydraulic Characteristics of Heat-Transfer Surfaces Formed by Spherical Cavities," II. Polzunova Cent. Scientific Research, Translated from Teplofizika Vysokikh Temperatur, Vol.29, No.6, 1992 Plenum Pub. Corp., pp. 928-933.
AS	Belen-kiy et al., "Heat Transfer Augmentation Using Surfaces Formed by a System fo Spherical Cavities," ISSN1064-2269/93/0002-0196, Heat Transfer Research, Vol. 25, No. 2, 1993, pp.196-203
AT	Kesarev et al., "Convective Heat Transfer in Turbulized Flow Past a Hemispherical Cavity," Heat Transfer Research, Vol. 25, No. 2, 1993, pp. 156-160.

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DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	BC					
	BD					
	BE					
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	BI					
	BJ					
	BK					

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	No
	BL							
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	BN							
	BO							
	BP							

## OTHER INFORMATION (Including Author, Title, Date, Pertinent pages. Etc.)

BR	N. Syred et al., "Effect of Surface Curvature on Heat Transfer and Hydrodynamics within a Single Hemispherical Dimple," Paper No. 2000-GT-236, Proceedings of ASME Turboexpo 2000, May 8-11, 2000, Munich Germany, pp. 1-6.
BS	H. K. Moon et al., "Channel Height Effect on Heat Transfer and Friction in a Dimpled Passage," IGTI Turbo Expo, Paper No. 99-GT-163, Indianapolis, pp. 1-8
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	CB					
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	CK					

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						YES	No
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CR	M. K. Chyu et al., "Convective Heat Transfer of Cubic Fin Arrays in a Narrow Channel," Journal of Turbomachinery, April 1998, Vol. 120, pp. 362-367.
CS	N. Zhang et al., "Heat Transfer and Friction Loss Performance in Flow Networks with Multiple Intersections," Experimental Heat Transfer, Vol. 6, 1993. pp. 243-257.
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FOREIGN PATENT DOCUMENTS

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						YES	No
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DR	V. N. Afanas'yev et al., "Heat Transfer and Friction on Surfaces Contoured by Spherical Depressions," Heat Transfer Research, Vol. 24, No. 1, 1992. pp. 24-105.
DS	V. N. Afanasyev et al., "Turbulent Flow Friction and Heat Transfer Characteristics for Spherical Cavities on a Flat Plate," Experimental Thermal and Fluid Science, 1993, Vol. 7, pp. 1-8.
DT	D. E. Metzger et al., "Developing Heat Transfer in Rectangular Ducts with Staggered Arrays of Short Pin Fins", Journal of Heat Transfer, Vol. 104, November 1982, pp. 100-706.

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ER	K. Takeishi et al., "HEAT TRANSFER CHARACTERISTICS OF A FLOW PASSAGE WITH LONG PIN FINS AND IMPROVING HEAT TRANSFER COEFFICIENT BY ADDING TURBULENCE PROMOTERS ON A ENDWALL, " Paper No. 2001-GT-178, IGTI Turbo Expo, New Orleans, pp.
ES	S. Anzai et al., "Effect of the Shape of Turbulence Promoter Ribs on Heat Transfer and Pressure Loss Characteristics", Bulletin of the Gas Turbine Society of Japan, 1992.
ET	

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